

RECEIVED  
CENTRAL FAX CENTER

NOV 06 2006

Atty. Dkt. No. 030307-0217  
U.S. Serial No. 10/623,578

## REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and the following commentary.

Claim 42 has been revised. Support for the amended claim is found throughout the original application, for example, at page 4, lines 29-30, at page 5, lines 5-8, at page 15, second paragraph, the paragraph bridging pages 13 and 14, the paragraph bridging pages 15 and 16, as well as second full paragraph on page 16, and page 17 *et seq.*, along with Examples 5 and 6.

In the final action of July 5, 2006, the Examiner maintained a rejection of claims 31-47 for alleged anticipation by U.S. patent No. 6,284,518 to Henick-Kling *et al.*, U.S. patent No. 5,798,237 to Picataggio *et al.*, U.S. patent No. 4,115,199 to Porubcan *et al.*, U.S. patent No. 3,655,396 to Goto *et al.*, and U.S. patent No. 5,075,226 to Kaneko *et al.*, respectively. In particular, the Examiner contends that the claimed culture is no different from the cultures of prior art because the former is characterized solely by a "transient metabolic change." The Examiner further states that "culture claims...recite that the culture includes the necessary culture media constituents to induce the desired change would likely be free of the art."

Claim 42 presently relates a culture of lactic acid bacterial cells that are characterized by a reduced glycolytic flux and, under aerobic conditions, a respiratory metabolism, the culture displaying a biomass yield exceeding that obtainable from substrate-level phosphorylation, where (i) the reduced glycolytic flux is effected by mutations provided in the cells to generate a lower rate of carbon-source metabolism and (ii) the respiratory metabolism is effected via manipulation of the cells to increase the yield of cellular ATP via oxidative phosphorylation when the cells are propagated in the presence of a terminal electron acceptor. Applicant submits that none of the cited patent teaches employing either a mutation that results in reduced glycolytic flux or any manipulation to cells that engenders an increase yield of ATP via oxidative phosphorylation.

Thus, the present application discloses that reduced glycolytic flux can be achieved by constructing or selecting mutants that have lower capacity for sugar transport or sugar specific reaction (specification at page 15, second paragraph). Example 5 illustrates suitable mutants, in that instance,

Any. Dkt. No. 030307-0217  
U.S. Serial No. 10/623,578

ones impaired in sugar metabolism that result in increased yield of ATP, which in turn leads to an increased biomass yield.

Furthermore, exemplary manipulations to the cells leading to increased ATP concentration are described in the specification. For instance, cells are manipulated to activate ATP synthase activity or to increase the proton gradient. See the paragraph bridging pages 13 and 14 and the paragraph bridging pages 15 and 16, as well as second full paragraph on page 16, and page 17 *et seq.*, along with Example 6.

Accordingly, the present claims relate to a culture of lactic acid bacterial cells that are characterized by a "constituent" change, not even hinted at any cited patent. By the same token, the anticipation rejection should be withdrawn in view of the amendments.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. Also, the Examiner is invited to contact the undersigned directly, should he feel that any issue warrants further consideration.

The Commissioner is hereby authorized to charge any additional fees, which may be required regarding this application under 37 CFR §§ 1.16-1.17, and credit any overpayment to Deposit Account No. 19-0741. Should no proper payment accompany this preliminary amendment, then the Commissioner is authorized to charge the unpaid amount to the same deposit account. If any extensions of time are needed for timely acceptance of papers submitted herewith, then Applicant hereby petitions for such extension under 37 CFR § 1.136 and authorizes payment of any such extensions fees from the deposit account.

Respectfully submitted,

Date 6 November 2006

By 

FOLEY & LARDNER LLP  
Customer Number: 22428  
Telephone: (202) 672-5404  
Facsimile: (202) 672-5399

Stephen A. Bent  
Attorney for Applicant  
Registration No. 29,768